REMARKS/ARGUMENTS

In this amendment, claims 12 and 13 have been amended. No claims have been added or canceled. Thus, claims 1-22 remain pending.

Objection to the Specification

The specification has been amended to correct the two typographical errors, which were pointed out in the Office Action.

Rejection under 35 USC § 103, Alston in view of Lee

Claims 1-11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alston (US 6,327,635) in view of Lee (US 6,650,096).

Claims 1-11

Claim 1 is allowable over the Alston in view of Lee as the proposed combination of the pulse width signal of Lee would destroy the function of the power selection circuit 210 of Alston, in particular the function of the switches 310, 312. Thus, one would not be motivated to combine the following elements, as recited in claim 1:

> *a switching element having a control terminal that receives said control signal;...*
>
> *said control signal is in the form of a pulse train for switching said switching element for said first value of said supply voltage, so sensed.*

Lee

Lee is directed to a buck switching regulator 100 that is used to deliver power to a computer system 400. *See Lee*, abstract and col. 6 lines 15-20. A buck switching regulator converts an input DC voltage to a lower DC voltage by opening and closing a switch to transfer a precise amount of energy to an inductor 14. *Id.*, col. 1 lines 21-34. The opening and closing of the switch is controlled by a pulse width modulation (PWM) controller 104. *Id.*, col.3 lines 35-39. The width of the pulse determines how much the voltage is lowered, i.e. a smaller width gives a lower output voltage. *Id.*, col. 4 lines 24-38.

Alston

Alston is directed to an add-on card 200 for a computer 100, where a power selection circuit 210 allows the add-on card to operate with a supplied voltage of 5V or 3.3V. *See Alston*, abstract and col. 1 lines 43-44. If a 3.3V supply voltage is available, switches 310, 312 are turned ON so that output line 222 is connected to the 3.3V input line 212. *Id.*, FIG. 3 and col. 4 lines 35-39. If the 3.3V supply voltage is not available, the switches 310, 312 are turned OFF and voltage regulator 308 steps down the 5V supply voltage on line 214 to a 3.3V supply voltage on output line 222. *Id.*, col. 4 lines 43-50.

A PWM signal would destroy the function of power selection circuit 210

The proposed combination of using the PWM signal of Lee to control the switches in Alston would cause the add-on card 200 to function incorrectly. Switches 310, 312 need to be ON all of the time when 3.3 volts is detected on line 212. If the control signal from Vout of driver 302 were a pulse train, the average output voltage on line 222 would be less than 3.3 volts, which is counter to the design of Alston. *Id.*, FIG. 3 and col. 4 lines 35-39.

Similarly, switches 310, 312 need to be OFF all of the time when 3.3V is not detected on line 212, as the Vout of regulator 308 would be pulled below 3.3V by the ground of line 212. Accordingly, the switches 310, 312 of Alston are intended to only be ON or OFF during operation. Thus using a pulse train for a control signal of the switches defeats the purpose of the invention of Alston.

For at least the reasons given, Applicant submits that claim 1 and its dependent claims 2-11 are allowable over Alston in view of Lee.

Claims 10, 11, and 19

In addition to being allowable for the same rationale as claim 1, claims 10 and 11 are allowable for additional reasons. For example, claim 11 recites a hard disk comprising the circuit of claim 1 and "*a motor control circuit coupled to said spindle motor and said head motor to control the application of power to said spindle motor and said head motor.*"

In Lee, voltage regulation system 100 furnishes power to computer system 400, which includes hard disk drive 438. *See Lee*, FIG. 16 and col. 6 lines 15-52. Voltage regulation system 100 resides separately from the hard disk drive 438 and provides power to multiple

devices. *Id.* Accordingly, voltage regulation system 100 is not part of hard disk drive 438, and does not have a motor control circuit as recited in claim 1. Thus, Lee does not teach or suggest a voltage control circuit on a hard drive, as recited in claim 11.

For at least this additional reason, Applicant submits that claim 11 is allowable over Alston in view of Lee. Applicant submits that independent claims 10 and 19 should be allowable for at least the same reasons as claim 11. Claims 20-22 depend from claim 19, and thus derive patentability at least therefrom.

Rejection under 35 USC § 102, Alston

Claims 12-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Alston.

Claims 13-18

Claim 13 is allowable as Alston does not disclose or suggest each and every element of claim 13. For example, claim 13 recites:

> *a voltage sensing circuit, configured to sense, at least at a predetermined time, a single supply voltage at one input node and provide a voltage indication signal based on the supply voltage, so sensed;*
>
> *at least one DC-DC conversion circuit, connected to said input node and to an output node, for converting said single supply voltage, so sensed, to a different desired output voltage and providing said different voltage on said output node; ...*
>
> *when said voltage indication signal indicates that said supply voltage is different from said desired output voltage, said control circuit enables said DC-DC conversion circuit to supply said different voltage on said output node;*

In Alston, there are two supply voltages on two input lines, i.e. 3.3V on line 212 and 5V on line 214. *See Alston*, FIG. 3. In contrast, claim 13 recites a single supply voltage at one input node.

Additionally, if a voltage does not exist on line 212, then voltage regulator 308 is used to step down the 5V on line 214. *Id.*, col. 4 lines 43-50. Thus, if the voltage on line 212 is different than 3.3V, another supply voltage on a different line (214) is used. In contrast, claim 13 recites that "*when said voltage indication signal indicates that said single supply voltage is*

different from said desired output voltage," the DC-DC conversion circuit converts "*said single supply voltage, so sensed, to a different desired output voltage.*"

For at least the reasons given, Applicant submits that claim 13 and its dependent claims 14-18 are allowable over Alston.

Claims 12

Applicant submits that independent claim 12 should be allowable for at least the same reasons as claim 13.

Rejection under 35 USC § 103, Alston and Lee in further view of Shenai

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alston in view of Lee in further view of Shenai (US 5,959,439).

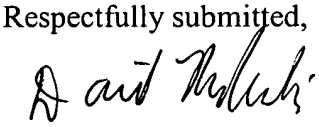
Claims 20-22 depend upon claim 19 and are allowable for at least the same rationale as claim 19. Shenai is cited as teaching conversions of voltage between 12 and 5 volts for a hard disk. Even assuming that Shenai teaches this limitation and that there is a motivation to combine, this teaching does not make up for the deficiencies in Alston and Lee with respect to these claims.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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